



**CALIFORNIA STATE SCIENCE FAIR  
2002 PROJECT SUMMARY**

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| <b>Name(s)</b><br>Alyssa M. Quaintance  | <b>Project Number</b><br><br>22321 |
| <b>Project Title</b><br>Bubbling Up Your Yard: The Effects of Gray Water on Grass and Flowering Plants  |                                    |
| <b>Abstract</b><br><b>Objectives/Goals</b><br>I am doing this project to find out whether recycled gray water can be safely used for irrigation, or if it is detrimental to the growth of plants. I think that some detergents are so strong that they could inhibit the growth, or possibly kill the plants. Enviromentally safe detergents on the market may even be beneficial to the plants. I hope to determine that gray water recycling could be used as a vital part of ecosystem management.<br><b>Methods/Materials</b><br>In my experiment I need a roll of sod, flowers, potting soil, five flats, five pots, Detergents, bottles, measuring spoons, a ruler and tap water. I put two inches of potting soil into each flat, cut the sod and put them into each flat. I watered the flowers and grass with detergent/water mixtures.<br><b>Results</b><br>I observed the grass height, color, green or yellowing, and root growth. With the flowers I observed the height, width, coloring of the leaves, number of flowers, buds and seed pods, as well as the general health of the plants. After careful observation of the grass, I recorded significant growth of grass blades and root system. The flowers declined in growth in December, but they seemed to recover and increase in size in January. Concentrated amounts of detergent are detrimental to the health of plants.<br><b>Conclusions/Discussion</b><br>After completing my experiment, I found that the detergents did not have any adverse affect on the gass and flowers. We can safely use gray water with moderate amounts of detergent to irrigate lawns at flowering plants. We can conserve household water use by recycling gray water through irrigation. |                                    |
| <b>Summary Statement</b><br>In my project I tested detergent mixtures on flowering plants and grass to simulate recycled gray water on our environment.   |                                    |
| <b>Help Received</b><br>Mother helped get materials, helped type report and helped put together my board. Jerry Brown advised me during phone interviews, and sent me the Small Flows magazine. Neighbors provided samples.   |                                    |